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<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <b>(New Nonprovisional Applications Under 37 CFR § 1.53(b))</b>	Attorney Docket No. <u>MS-137856.1</u>
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**TO THE ASSISTANT COMMISSIONER FOR PATENTS:**

Transmitted herewith is a patent application identified as follows:

First-named inventor: Bruce A. Leak

Title: "Interactive Television Triggers Having Connected Content/Disconnected Content Attribute"

Original Patent Application.

Continuing Application (prior application not abandoned):

Continuation     Divisional     Continuation-in-part (CIP)  
of prior application No: \_\_\_\_\_ Filed on: \_\_\_\_\_.

A statement claiming priority under 35 USC § 120 has been added to the specification.

Enclosed are:

15 pages of Specification and Title Page  
5 pages Claims  
1 page Abstract  
4 pages of Formal Drawings  
2 pages Declaration/Power of Attorney (signed)  
2 pages Assignment  
1 page Recordation Form Cover Sheet  
3 page 1449 form citing 13 references  
13 copies of references cited in 1449 form  
 Transmittal letter (in duplicate)  
 A check for filing fee and recording assignment (\$836.00)  
 Return Receipt Postcard

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CLAIMS AS FILED				
FOR	NO. FILED	NO. EXTRA	RATE	FEE
Total Claims	22	2	\$18.00	\$ 36.00
Independent Claims	3	0	\$78.00	\$ 0.00
Multiple Dependent Claims (if applicable)				\$0.00
Assignment Recording Fee				\$40.00
Basic Filing Fee				\$760.00
			Total Filing Fee	\$836.00

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1 PROVIDING MULTIPLE LEVELS OF INTERACTIVE TELEVISION  
2 SERVICE USING TRIGGERS AND TRIGGER FILTERS

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6

7 BACKGROUND OF THE INVENTION

8 Figure 1 depicts a conventional interactive television  
9 system 100, including a broadcast television transmitter 105, a  
10 broadcast antenna 110, and a pair of receiver units 115 and  
11 120. Receiver units 115 and 120, also referred to as "Internet  
12 terminals" or "set-top boxes," allow viewers to interact with  
13 network content via bi-directional (i.e., two-way) connections  
14 122 and 123, watch broadcast television via a unidirectional  
15 (i.e., one-way) broadcast connection between antenna 110 and  
16 the receiver units, or simultaneously do both.

17 Receiver units 115 and 120 merge network and broadcast  
18 experiences, displaying icons, data, and other information  
19 along with broadcast video. Much of the displayed information  
20 is interactive, which is to say that the viewer can interact  
21 with the information to obtain a personalized experience. For  
22 example, an icon broadcast with a TV commercial can provide a  
23 link to additional information about an advertised product or  
24 service.

25 Broadcasters present viewers with interactive information  
26 by broadcasting a "trigger" 126 along with television video  
27 130. Trigger 126 may include the interactive information  
28 and/or may provide a link to additional information resources.  
29 A link to additional information might include the pathname of

1 a local file on receivers 115 and 120 or a Uniform Resource  
2 Identifier (URI) for an Internet resource, such as a sponsor's  
3 Web site.

4 Web pages and other information resources that require a  
5 bi-directional connection to a remote information store are  
6 termed "connected content." Locally stored information  
7 resources that can be accessed without a bi-directional  
8 connection to a remote information store are termed  
9 "disconnected content." A locally stored electronic  
10 programming guide stored in local memory is an example of  
11 disconnected content. Disconnected content may include links  
12 to connected content.

13 A trigger identifying connected content typically causes  
14 receiver units 115 and 120 to display an icon offering a viewer  
15 the option of purchasing an advertised item by selecting the  
16 icon and filling out an order form. In the example of Figure  
17 1, trigger 126 has caused receiver units 115 and 120 to display  
18 an icon 135 that provides a hyperlink to an order form 145 on a  
19 remote information store 150. If a viewer selects icon 135  
20 using e.g. a handheld remote control unit 140, then the  
21 viewer's receiver unit requests and receives order form 145.  
22 The viewer can then interact with order form 145 to submit  
23 user-specific information back to a merchant's server.

24 A trigger identifying disconnected content may also cause  
25 receiver units 115 and 120 to display an icon, but the  
26 information associated with the icon will be accessible without  
27 a bi-directional connection to remote information stores. For  
28 example, such a trigger might refer to an electronic  
29 programming guide stored in local memory on receiver units 115  
30 and 120. Disconnected content can be delivered to receiver  
31 units 115 and 120 in a number of ways; for example, the viewer  
32 may load the content into local memory, or the content may be

1 encoded into a broadcast television signal and transmitted to  
2 receiver units 115 and 120 for local storage.

3 Vendors who lease or sell receiver units provide their  
4 customers access to remote information stores, typically for a  
5 fixed monthly fee. These vendors in turn buy bandwidth from  
6 network equipment companies that supply the necessary hardware  
7 to connect receiver units to remote information stores. In a  
8 typical agreement between a receiver-unit vendor and a network  
9 equipment company, the costs to the vendor depend upon whether  
10 and how long their customers connect to remote information  
11 stores. Furthermore, the time during which a customer connects  
12 to a remote information store affects the charges accrued by  
13 service suppliers, peak-usage periods typically costing more  
14 per unit time than do periods of lower activity. Thus, the  
15 connection costs incurred by receiver-unit vendors depend upon  
16 whether and when their customers connect to remote information  
17 stores.

18 Receiver-unit vendors would like to offer different levels  
19 of service at different prices, so that customers who connect  
20 to remote information stores pay for the additional costs  
21 associated with connecting. By making customers who connect to  
22 remote information stores pay for connection costs, receiver-  
23 unit vendors (and others who support interactive television)  
24 can offer a lower level of interactive television service for  
25 cost-sensitive customers who do not want to pay to connect to  
26 remote information stores.

27

28 **SUMMARY**

29 The present invention employs a system of broadcast  
30 triggers in which connectivity values identify associated  
31 information resources as either "connected content" or  
32 "disconnected content." The term "connected content" refers to

1 information resources, such as Web pages, that are accessed via  
2 bi-directional connections to remote information stores; the  
3 term "disconnected content" refers to information resources,  
4 such as a locally stored program guide, that do not require  
5 such a bi-directional connection.

6 In accordance with an embodiment of the invention,  
7 receiver units that are temporarily or permanently incapable of  
8 establishing bi-directional connections to remote information  
9 stores ("disconnected receivers") can identify and reject  
10 triggers that direct the viewer to connected content (i.e.,  
11 connected-content triggers) by examining the connectivity  
12 values of incoming triggers. Thus, content providers can  
13 broadcast connected-content triggers to connected and  
14 disconnected receiver units without interrupting disconnected  
15 receiver units with triggers they cannot execute. Furthermore,  
16 the ability to distinguish between connected-content triggers  
17 and disconnected-content triggers allows service providers to  
18 offer a lower level of service to those users who do not wish  
19 to pay for the ability to establish a bi-directional connection  
20 to remote information stores.

21 In accordance with another embodiment of the invention,  
22 service suppliers can offer a semi-connected level of service  
23 to customers who opt for limited access to remote information  
24 stores. For example, such users may agree to be barred access  
25 to connected content during peak hours, or for more than a  
26 certain number of hours per month.

27 Disconnected receiver units include a trigger filter that  
28 can distinguish between disconnected-content triggers and  
29 connected-content triggers. Disconnected receiver units filter  
30 out connected-content, and so do not interrupt the respective  
31 viewers with links to inaccessible content. Filters in  
32 receiver units adapted to provide the semi-connected level of

1 service recognize a third type of trigger that can be executed  
2 at a later time, allowing customers of this level of service to  
3 take advantage of less expensive off-peak rates offered by  
4 network equipment companies.

5 Other features of the present invention will be apparent  
6 from the accompanying drawings and from the detailed  
7 description that follows.

8

9 BRIEF DESCRIPTION OF THE DRAWINGS

10 Figure 1 (Prior Art) is a diagram of an interactive  
11 television system 100.

12 Figure 2 is a simplified diagram of a pair of triggers  
13 that include connectivity attributes.

14 Figure 3 is a simplified diagram of an interactive  
15 television system 300 in accordance with one embodiment of the  
16 present invention.

17 Figure 4 is a flowchart depicting methods carried out by  
18 system 300 of Figure 3.

19 Figure 5 is a simplified diagram of an interactive  
20 television system in accordance with an embodiment of the  
21 present invention.

22

23 DETAILED DESCRIPTION

24 The present invention enables vendors who lease or sell  
25 receiver units to offer different levels of service to  
26 receiver-unit customers. One level of service allows customers  
27 to exchange information with remote information stores. For  
28 example, this level of service might allow customers to  
29 establish dial-up or cable connections to dedicated servers, or  
30 to Web servers via the Internet. Broadcasters can send these  
31 customers links, in the form of broadcast "triggers," to Web  
32 servers that provide the customer with additional information

1 relating to a broadcast program or commercial. Customers can  
2 then select such links to access the additional information.  
3 Selecting a link establishes a bi-directional connection to the  
4 resource indicated by the link. In accordance with one  
5 embodiment of the invention, information resources, such as Web  
6 pages, that require a bi-directional connection from a receiver  
7 unit are termed "connected content."

8 Some customers are either unable or unwilling to access  
9 connected content. These customers may be uncomfortable with  
10 the idea of exchanging information with remote sites or may  
11 simply be unwilling to pay for the requisite connectivity. The  
12 present invention supports such customers by allowing receiver-  
13 unit vendors to supply "disconnected" receiver units that do  
14 not support the ability to access connected content.

15 Disconnected receiver units provide access to interactive  
16 information, but this information is limited to information  
17 that is transmitted in a broadcast video channel, stored  
18 locally in the receiver unit, or both. Such information,  
19 termed "disconnected content," typically includes electronic  
20 program guides, electronic newspapers, or program reminders.

21 Disconnected receiver units in accordance with the  
22 invention include a trigger filter that distinguishes between  
23 triggers that direct the viewer or receiver unit to connected  
24 content (i.e., connected-content triggers) and triggers that  
25 direct the viewer or receiver unit to disconnected content  
26 (i.e., disconnected-content triggers). Disconnected receiver  
27 units filter out connected-content triggers, and so do not  
28 interrupt the respective viewers with links to inaccessible  
29 content.

30 Connected- and disconnected-content triggers can be  
31 transmitted in the vertical-blanking interval (VBI) of an  
32 analog broadcast video signal. The text service channels of

1 line 21 of the VBI provide a robust communication medium,  
2 albeit at relatively low bandwidth. In some embodiments of the  
3 invention, triggers are text based, and their syntax follows a  
4 basic format that complies with the Electronic Industries  
5 Association EIA-746A, "Transport of Internet Uniform Resource  
6 Locator (URL) Information Using Text-2 (T-2) Service"  
7 (September 1998), which is incorporated herein by reference.  
8 EIA-746A defines the formatting necessary to transmit Internet  
9 URLs using the vertical-blanking interval of a broadcast  
10 television signal, and is incorporated herein by reference.  
11 For further details regarding acceptable trigger syntax, see  
12 the Advanced Television Enhancement Forum Specification  
13 (ATVEF), Versions 1.1 revision 26, (2/2/99), which is  
14 incorporated herein by reference.

15 In one embodiment that complies with EIA-746A, each  
16 trigger includes a uniform resource identifier (URI) followed  
17 by zero or more fields and an optional checksum. Each field,  
18 in turn, includes an attribute/value pair. The following  
19 illustrates typical trigger format:

20  
21 <uri> [attr<sub>1</sub>:val<sub>1</sub>] [attr<sub>2</sub>:val<sub>2</sub>] ... [attr<sub>n</sub>:val<sub>n</sub>] [checksum]  
22

23 Figure 2 depicts an exemplary connected-content trigger  
24 200 and an exemplary disconnected-content trigger 230. Trigger  
25 200 includes a URI field 205, a connectivity field 210, an  
26 "expires" field 215, and a checksum 220.

27 In connected content trigger 200, URI field 205 identifies  
28 a Web page presenting additional information about a product,  
29 service, or event related to a broadcast television program or  
30 commercial. The same field 205 in disconnected content trigger  
31 230 identifies a resource local to receiver units configured to  
32 receive and understand trigger 230.

1       Connectivity field 210, identified by a connectivity  
2 attribute 222, includes a connectivity value 225 indicating  
3 whether URI 205 addresses connected content. In connected-  
4 content trigger 200, a connectivity value of "true" indicates  
5 that URI 205 addresses connected content; in disconnected-  
6 content trigger 230, a connectivity value of "false" indicates  
7 that the associated URI 205 addresses disconnected content.  
8 Connectivity value 225 may be set to "true" even if URI 205 is  
9 directed to disconnected content that includes links to  
10 connected content. For example, a connected-content trigger  
11 may call up a form in local memory (disconnected content) that,  
12 once filled out, requires a connection for submission. Thus,  
13 URI 205 is directed to a local resource, but the author of the  
14 trigger might nevertheless label set value 225 to "true" to  
15 avoid interrupting viewers with a form they cannot use.

16       The "expires" field 215 is optional, and can be used to  
17 provide a time stamp indicating a time at which trigger 200  
18 expires. One embodiment employs the form *yyyymmddThhmmss*,  
19 where the capital letter "T" separates the date from the time.  
20 The time string may be shortened by reducing the resolution.  
21 For example *yyyymmddThhmm* (no seconds specified) is valid, as  
22 is *yyyymmdd* (no time specified at all). When no time is  
23 specified, the trigger expires at the beginning of the  
24 specified day. The "expires" attribute can be abbreviated as  
25 the single letter "e" (e.g., [e:19991031] causes trigger 200 to  
26 expire on October 31, 1999). The "expires" field 215 ensures  
27 that information contained in triggers is timely. Without this  
28 attribute, a rebroadcast of a show might provide a "stale" link  
29 that is no longer directed to a valid information resource.

30       Checksum 220 can be appended to the end of trigger 200 to  
31 detect data corruption that may occur during receipt or  
32 transmission of a trigger. One embodiment employs a two-byte

1       hexadecimal checksum produced by the standard TCP/IP checksum  
2       algorithm described in Request For Comments (RFC) 719,  
3       "Internet Protocol," September 1981, which is incorporated  
4       herein by reference.

5              Figure 3 is a simplified diagram of an interactive  
6       television system 300 in accordance with one embodiment of the  
7       invention. System 300 includes a broadcast antenna 301  
8       broadcasting television video 302 and respective connected-  
9       content and disconnected-content triggers 200 and 230. System  
10      300 also includes a first television receiver unit 305 and a  
11      second television receiver unit 306. Receiver units 305 and  
12      306 provide customers access to interactive content using an  
13      ordinary TV set 308 as a display and a remote control 309 or  
14      wireless keyboard (not shown) for user input. Receiver units  
15      305 and 306 include respective trigger filters 307 and 310. As  
16      discussed below in detail, trigger filters 307 and 310 can be  
17      configured to accept or reject connected-content triggers.

18              Receiver unit 305, a "connected" receiver unit, can  
19      establish and maintain a connection 320 to a remote information  
20      store 315. Receiver unit 306, a "disconnected" receiver unit,  
21      is not configured to connect to remote information store 315.  
22      Remote information store 315 is, in one embodiment, a server  
23      controlled by a television sponsor, and includes a digital form  
24      325 adapted to query prospective buyers who access information  
25      store 315 via connection 320. Connection 320 may be any  
26      suitable bi-directional connection, including a POTS (plain old  
27      telephone service), Integrated Services Digital Network (ISDN),  
28      T1, fiber optic link, cable modem, or satellite.

29              In one embodiment, receiver units 305 and 306 are WebTV®  
30      set-top Internet Terminals similar to those described in the  
31      following documents, but modified to support features of the  
32      invention:

- 1        1. U.S. Patent Application Serial Number 09/099,118,  
2                 entitled "Communicating Logic Addresses Of Resources  
3                 In A Data Service Channel Of A Video Signal," filed  
4                 June 17, 1998, by Daniel J. Zigmond, et al.;
- 5        2. U.S. Patent Application Serial Number 09/295,746,  
6                 entitled "Enabling and/or Disabling Selected Types Of  
7                 Broadcast Triggers," filed April 20, 1999, by Timothy  
8                 F. Park, et al.; and
- 9        3. U.S. Patent Application Serial Number 09/295,436,  
10                 entitled "Receiving An Information Resource From The  
11                 Internet If It Is Not Received From A Broadcast  
12                 Channel," filed April 20, 1999, by Daniel J.  
13                 Zigmond, et al.

14        The content of these documents is incorporated herein by  
15        reference. Receiver units 305 and 306 may be other types of  
16        receiver units, such as a personal computer having a television  
17        tuner card such as the "Windows® 98 Broadcast PC" system.

18        Figure 4 is a flowchart 400 illustrating receiver methods  
19        of receiver units 305 and 306. Each of receiver units 305 and  
20        306 receives connected-content trigger 200 of Figure 2 (steps  
21        405 and 407). Connected receiver unit 305 subjects trigger 200  
22        to filter 307, which is configured to accept connected-content  
23        triggers. Thus, filter 307 forwards connected-content trigger  
24        200 for execution in step 410. In the example of Figure 3,  
25        executing trigger 200 causes an icon (not shown) to be  
26        displayed on display 308 of receiver unit 305. If the viewer  
27        selects the icon using e.g. handheld remote control unit 309,  
28        then receiver unit 305 retrieves form 325 from remote  
29        information store 315 and presents form 325 to the viewer. The  
30        viewer may then use form 325 to provide personalized  
31        information to the entity that maintains information store 315.  
32        In a typical example, a viewer fills in form 325 to request

1 additional information about a product or service presented to  
2 the viewer during a television advertisement.

3 Returning to Figure 4, disconnected receiver unit 306  
4 subjects trigger 200 to filter 310, which is configured to  
5 reject connected-content triggers. That is, filter 310 checks  
6 connectivity value 225 of connectivity field 210 (both of  
7 Figure 2) and determines that value 225 is "true," indicating  
8 that trigger 200 is associated with connected content. Filter  
9 310 therefore rejects trigger 200 in a decision depicted as  
10 step 415. In rejecting trigger 200, receiver unit 306 simply  
11 ignores trigger 200 (step 420) and awaits a subsequent trigger.

12 Next, receiver 305 and 306 receive disconnected-content  
13 trigger 230, in which connectivity value 225 is "false." This  
14 value indicates that trigger 230 is associated with content  
15 that is to be made available disconnected receiver units.  
16 Thus, filter 310 passes trigger 230 (step 415). Disconnected  
17 receiver unit 306 then executes trigger 230 (step 425), which  
18 is to say that receiver unit 306 carries out some instruction  
19 expressed by trigger 230. For example, receiver unit 306 might  
20 display an icon presenting a link a program guide, or some  
21 other local resource. Filter 307 also passes disconnected-  
22 content triggers, so connected receiver unit 305 also executes  
23 disconnected-content trigger 230.

24 For a more detailed treatment of triggers and trigger  
25 filters, see co-pending application serial number 09/295746  
26 entitled "Enabling and/or Disabling Selected Types of Broadcast  
27 Triggers," by Timothy F. Park, Dean J. Blackketter, and Sandra  
28 R. Bernardi, the contents of which is incorporated herein.

29 Vendors of receiver units typically provide customers  
30 access to remote information stores for a fixed monthly fee.  
31 Vendors, in turn, buy bandwidth from network equipment  
32 companies that supply the necessary hardware to connect

1 receiver units to remote information stores. In a typical  
2 agreement between a vendor and a network equipment company, the  
3 costs to the vendor depend upon the time during which customers  
4 connect, peak-usage periods typically costing more per unit  
5 time than periods of lower activity. Thus, the connection  
6 costs incurred by vendors depend upon whether and when their  
7 customers connect to remote information stores.

8 One embodiment of the invention allows vendors to offer  
9 receiver-unit customers a level of service that allows access  
10 to connected content only during specified times, such as  
11 during periods of relatively low activity. In accordance with  
12 this embodiment, some receiver units are configured to ignore  
13 connected-content triggers during specified time periods, or to  
14 store connected-content triggers for execution at a later time.  
15 For example, a viewer might execute a link to connected content  
16 that provides additional information about an advertised  
17 product or service. The viewer's receiver unit might then  
18 store the link for execution at a later time.

19 Figure 5 is a simplified diagram of an interactive  
20 television system 500 in accordance with an embodiment of the  
21 invention that allows vendors to offer receiver-unit customers  
22 what might be called a "semi-connected" level of service.

23 System 500 includes many of the components discussed above in  
24 connection with Figure 3, like-numbered elements being similar.  
25 System 500 additionally includes a semi-connected receiver unit  
26 505 that acts as a connected-content receiver at times  
27 determined by connectivity information stored in a local memory  
28 508. During those times, receiver unit 505 can establish or  
29 maintain a bi-directional connection 510 to remote information  
30 store 315. At other times, receiver unit 505 acts like  
31 disconnected receiver unit 306 of Figures 4 and 5. Thus, the  
32 configuration data in local memory 508 allows receiver unit 505

1 to access connected content only during proscribed periods.  
2 Alternatively, receiver unit 505 might filter out connected-  
3 content triggers during proscribed periods and nevertheless  
4 allow the viewer to access connected content, as desired,  
5 during those periods.

6 Some types of connected content may not make sense if  
7 retrieved later. For example, an enhancement to a broadcast  
8 television show may be "stale" if presented during a subsequent  
9 program. Other types of connected content are better suited  
10 for delayed execution. For example, a television commercial  
11 may offer a connected-content link to additional information  
12 about an advertised product, such as the current price.

13 Selecting the link may prompt the sponsor to send the viewer  
14 additional information via e-mail, conventional mail, or  
15 telephone. In such a case, the viewer need not establish a  
16 connection right away to obtain the desired response from the  
17 sponsor. It might therefore make sense accept viewer requests  
18 and send them in later when a connection is established.

19 Figure 6 depicts a trigger 600 in accordance with an  
20 embodiment of the invention that supports connectivity  
21 attributes that identify triggers that may be executed at a  
22 later time. Trigger 600 is similar to triggers 200 and 230 of  
23 Figure 2, like-numbered features being the same. Trigger 600  
24 is different, however, in that connectivity value 225 is set to  
25 "later," indicating that trigger 600 refers to connected  
26 content that is suitable for future access.

27 Trigger 600 can be executed immediately by connected  
28 receiver units, but can also be executed later by semi-  
29 connected receiver units. For example, a semi-connected  
30 receiver unit may store trigger 600, or some portion thereof,  
31 for later execution. The semi-connected receiver unit then  
32 executes each trigger in local memory when a connection is

1 established at some later time. The later time might be a time  
2 of day, the end of a random or specified period from receipt of  
3 the trigger, or the next time the viewer initiates a  
4 connection.

5 Receiver units 305, 306, and 505 may be hard-wired to  
6 function as connected, disconnected, or semi-connected receiver  
7 units. Alternatively, their respective functionality can be  
8 defined by configuration data stored in local memory (e.g.,  
9 memory 508). This alternative allows vendors to preset and/or  
10 remotely modify receiver units to establish a desired level of  
11 service. In other embodiments, the customer can select between  
12 connected, disconnected, and semi-connected receiver  
13 configurations. The customer may therefore decide whether he  
14 or she wishes to be notified of connected content. Local  
15 memory can be any physical medium that stores configuration  
16 data associated with the level of connectivity, including a  
17 RAM, hard and floppy disks, CD-ROM, DVD, and flash ROM.

18 Connectivity field 210 (Figures 2 and 6) can support  
19 additional connectivity values. For example, the presence of  
20 field 210 can indicate that the associated trigger refers to  
21 connected content, and the absence of field 210 can indicate  
22 that a trigger refers to disconnected content. In other  
23 embodiments, connectivity value 225 can be assigned a  
24 variable indicating the likelihood that the associated trigger  
25 will require access to connected content. Such variable can be  
26 numbers that range from zero (zero percent likelihood of  
27 involving a connection to a remote information store) to one  
28 hundred (a one hundred percent likelihood of involving a  
29 connection to a remote information store). Receiver units can  
30 then determine whether to execute a given trigger based on the  
31 likelihood that the trigger involves a connection. This  
32 embodiment may be used when a trigger identifies a number of

1 resources, only some of which are directed to connected  
2 content.

3 In another embodiment, disconnected receiver units reject  
4 triggers to connected content not by ignoring them, but instead  
5 provide the viewer with an indication that a displayed link  
6 cannot be executed. Disconnected receiver units may, for  
7 example, provide a message indicating that selecting a  
8 displayed icon will have no effect.

9 In yet another embodiment, connected content and  
10 disconnected content are defined as set forth in the U.S.  
11 patent application Serial No. 09/345,247, entitled "Interactive  
12 Television Triggers Having Connected Content/Disconnected  
13 Content Attribute," by Leak et al., which is incorporated  
14 herein by reference.

15 Although the present invention is described in connection  
16 with certain specific embodiments for instructional purposes,  
17 the present invention is not limited thereto. Accordingly,  
18 various modifications, adaptations, and combinations of various  
19 features of the described embodiments can be practiced without  
20 departing from the scope of the invention as set forth in the  
21 claims.

1    CLAIMS

2    What is claimed is:

3    1. A method comprising:

- 4        a. receiving a connected-content trigger on a first  
5           receiver unit and a second receiver unit, the  
6           connected-content trigger having a first value  
7           indicating that first content associated with the  
8           connected-content trigger is connected content, the  
9           first receiver unit including a trigger filter;
- 10      b. rejecting the connected-content trigger with the  
11           trigger filter such that the first receiver unit  
12           ignores the connected-content trigger;
- 13      c. executing the connected-content trigger on the second  
14           receiver unit;
- 15      d. receiving a disconnected-content trigger on the first  
16           and second receiver units, the disconnected-content  
17           trigger having a second value indicating that second  
18           content associated with the disconnected-content  
19           trigger is disconnected content;
- 20      e. accepting the disconnected-content trigger with the  
21           trigger filter; and
- 22      f. executing the disconnected-content trigger on the  
23           first and second receiver units.

24

25    2. The method of claim 1, wherein disconnected content is  
26           content that does not require a bi-directional connection  
27           to a remote information store.

28

29    3. The method in claim 1, wherein executing a connected-  
30           content trigger comprises at least one of establishing and  
31           maintaining a bi-directional connection to a remote  
32           information store.

1

2 4. The method in claim 1, wherein rejecting a trigger  
3 comprises preventing a display of information associated  
4 with the trigger.

5

6 5. The method of claim 1, wherein rejecting the connected-  
7 content trigger comprises storing at least a portion of  
8 the connected-content trigger.

9

10 6. The method of claim 1, further comprising storing the  
11 disconnected content in a first and second local memory on  
12 the respective first and second receiver units.

13

14 7. The method of claim 6, wherein the storing occurs before  
15 (b).

16

17 8. The method of claim 6, wherein the disconnected content  
18 comprises a plurality of linked web pages.

19

20 9. The method of claim 8, further comprising displaying a  
21 first one of the web pages and then displaying a second  
22 one of the web pages without establishing a bi-directional  
23 connection to a remote information store.

24

25 10. The method of claim 8, further comprising displaying a  
26 first one of the web pages and then displaying a plurality  
27 of the web pages without establishing a network  
28 connection.

29

30 11. The method of claim 1, further comprising:

1       g. storing first configuration data in the first  
2       receiver unit before (b), the first configuration  
3       data defining a disconnected configuration;  
4       h. storing second configuration data in the first  
5       receiver unit defining a connected configuration; and  
6       i. having stored the second configuration data,  
7       receiving and executing a second connected content  
8       trigger that includes a third value indicating that  
9       third content associated with the second connected  
10      content-trigger is connected content.

11

12     12. The method of claim 1, wherein rejecting the connected-  
13       content trigger includes storing at least a portion of the  
14       connected-content trigger for execution at a later time.

15

16     13. The method of claim 12, wherein the later time is a  
17       specified time of day.

18

19     14. The method of claim 12, wherein the later time is an end  
20       of a delay period beginning upon receipt of the connected-  
21       content trigger.

22

23     15. A receiver unit comprising:  
24       a. configuration data stored in a local memory; and  
25       b. means for distinguishing disconnected-content  
26       triggers from connected-content triggers, and for  
27       executing the disconnected-content triggers without  
28       executing the connected-content triggers.

29

30     16. The receiver unit of claim 15, further comprising means  
31       for modifying the configuration data of the receiver unit.

32

1    17. The receiver unit in claim 15, wherein the disconnected-  
2    content trigger includes a first connectivity value,  
3    wherein the connected-content trigger includes a second  
4    connectivity value, and wherein the means for  
5    distinguishing disconnected-content triggers from  
6    connected-content triggers distinguishes triggers uses the  
7    first and second values.

8

9    18. A system comprising:

- 10    a. a transmitter transmitting video, a connected-content  
11    trigger, and a disconnected-content trigger;
- 12    b. a disconnected receiver unit that receives the  
13    connected-content trigger and the disconnected-  
14    content trigger and executes the disconnected-content  
15    trigger and rejects the connected-content trigger,  
16    the disconnected receiver unit having a first  
17    unidirectional connection to the transmitter; and
- 18    c. a connected receiver unit that receives and executes  
19    both the connected-content trigger and the  
20    disconnected-content trigger, the second receiver  
21    unit having a bi-directional connection to a remote  
22    information store and a second unidirectional  
23    connection to the transmitter.

24

- 25    19. The system of claim 18, further comprising a third  
26    receiver unit that receives the connected-content trigger  
27    and executes the connected-content trigger at a specified  
28    time, the third receiver having a bi-directional  
29    connection to a remote information store at a later time  
30    and a third unidirectional connection to the transmitter.

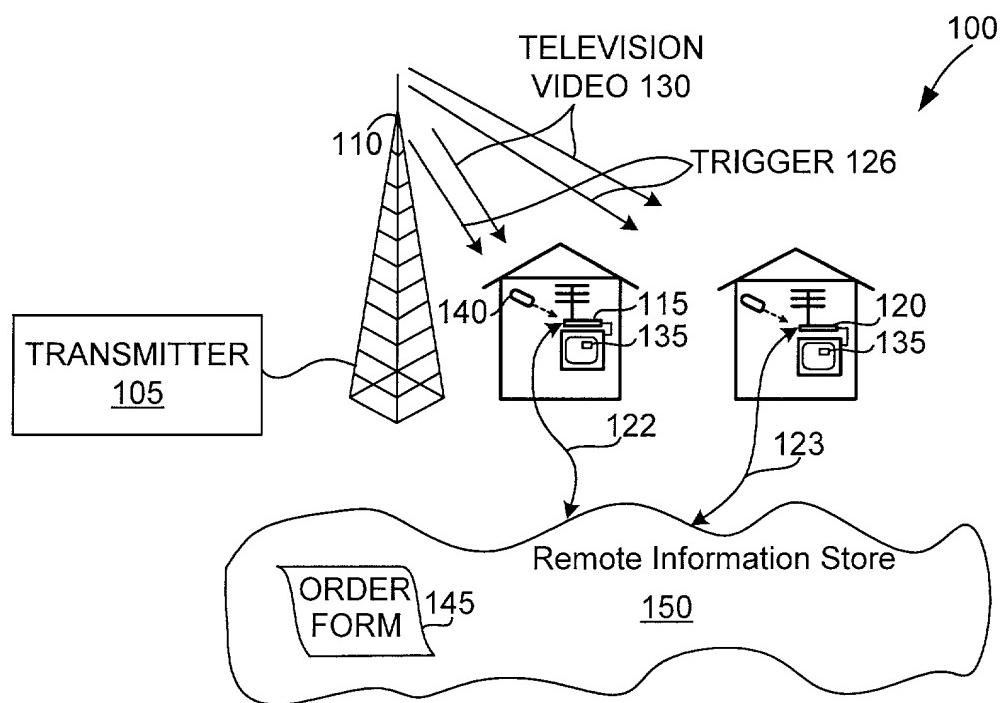
31

- 1    20. The system of claim 18, further comprising a third  
2       receiver unit adapted to receive the connected-content  
3       trigger and stores at least a portion of the connected-  
4       content trigger for execution at a later time.
- 5
- 6    21. The system of claim 20, wherein the later time is a  
7       specified time of day.
- 8
- 9    22. The system of claim 20, wherein the later time is an end  
10      of a delay period beginning upon receipt of the connected-  
11      content trigger.

1    ABSTRACT OF THE DISCLOSURE

2       An interactive television system includes "connected"  
3 receiver units capable of establishing bi-directional  
4 connections to remote information stores, such as Web servers,  
5 and "disconnected" receiver units unequipped to make such  
6 connections. The system supports the use of broadcast triggers  
7 that include connectivity values indicating whether an  
8 information resource identified by a trigger refers to  
9 "connected content" or "disconnected content." The term  
10 "connected content" refers to information resources that  
11 require bi-directional connections to remote information  
12 stores; the term "disconnected content" refers to information  
13 resources, such as a locally stored program guide, that do not  
14 require such bi-directional connections. Disconnected receiver  
15 units identify and reject connected-content triggers by  
16 examining connectivity values broadcast as part of triggers.  
17 Thus, content providers can broadcast connected-content  
18 triggers to connected and disconnected receiver units without  
19 interrupting disconnected receiver units with links to  
20 inaccessible content. Furthermore, the ability to distinguish  
21 between connected and disconnected content allows vendors who  
22 sell or lease receiver units to offer a lower level of service  
23 to those customers who do not wish to pay for the ability to  
24 access connected content.

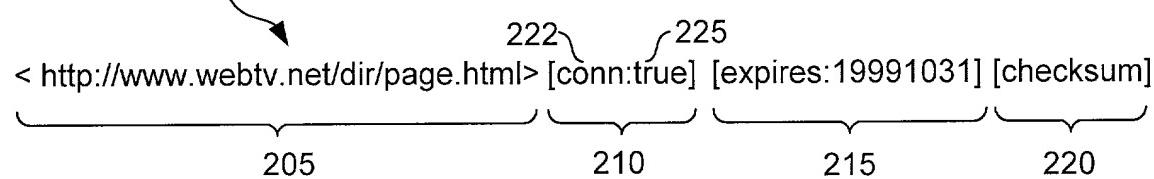
1/4



**FIG. 1**  
(Prior Art)

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## CONNECTED-CONTENT TRIGGER 200



## DISCONNECTED-CONTENT TRIGGER 230

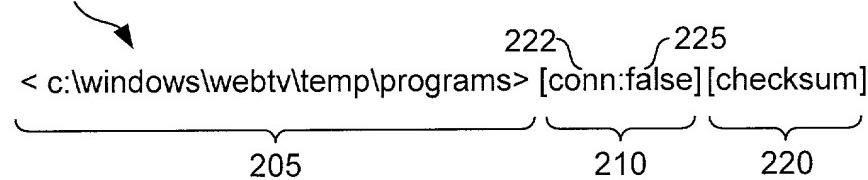


FIG. 2

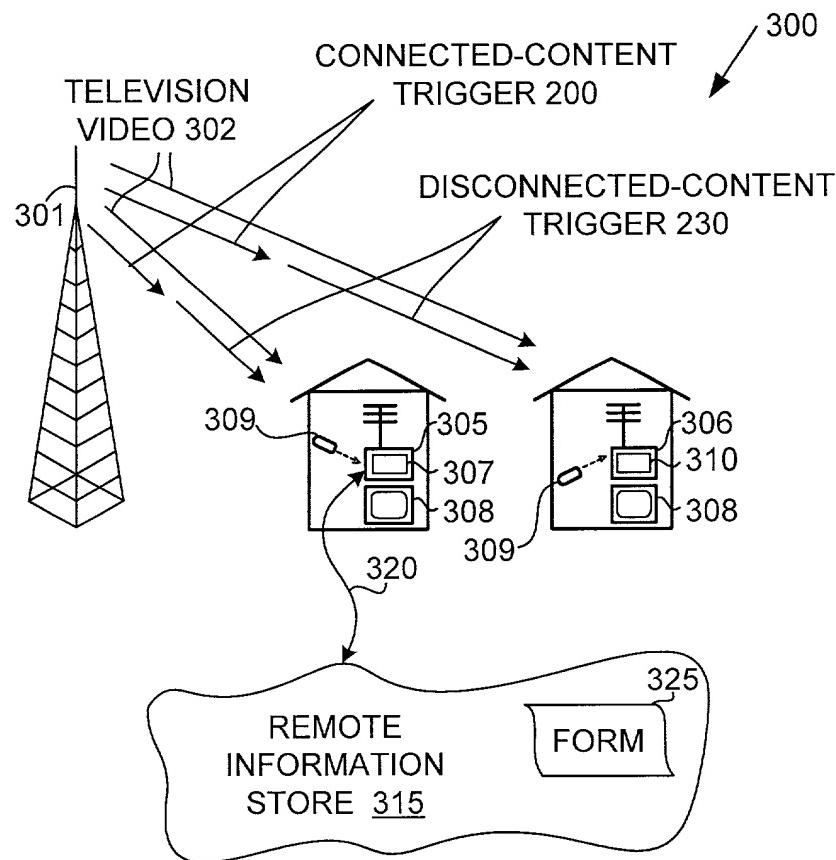


FIG. 3

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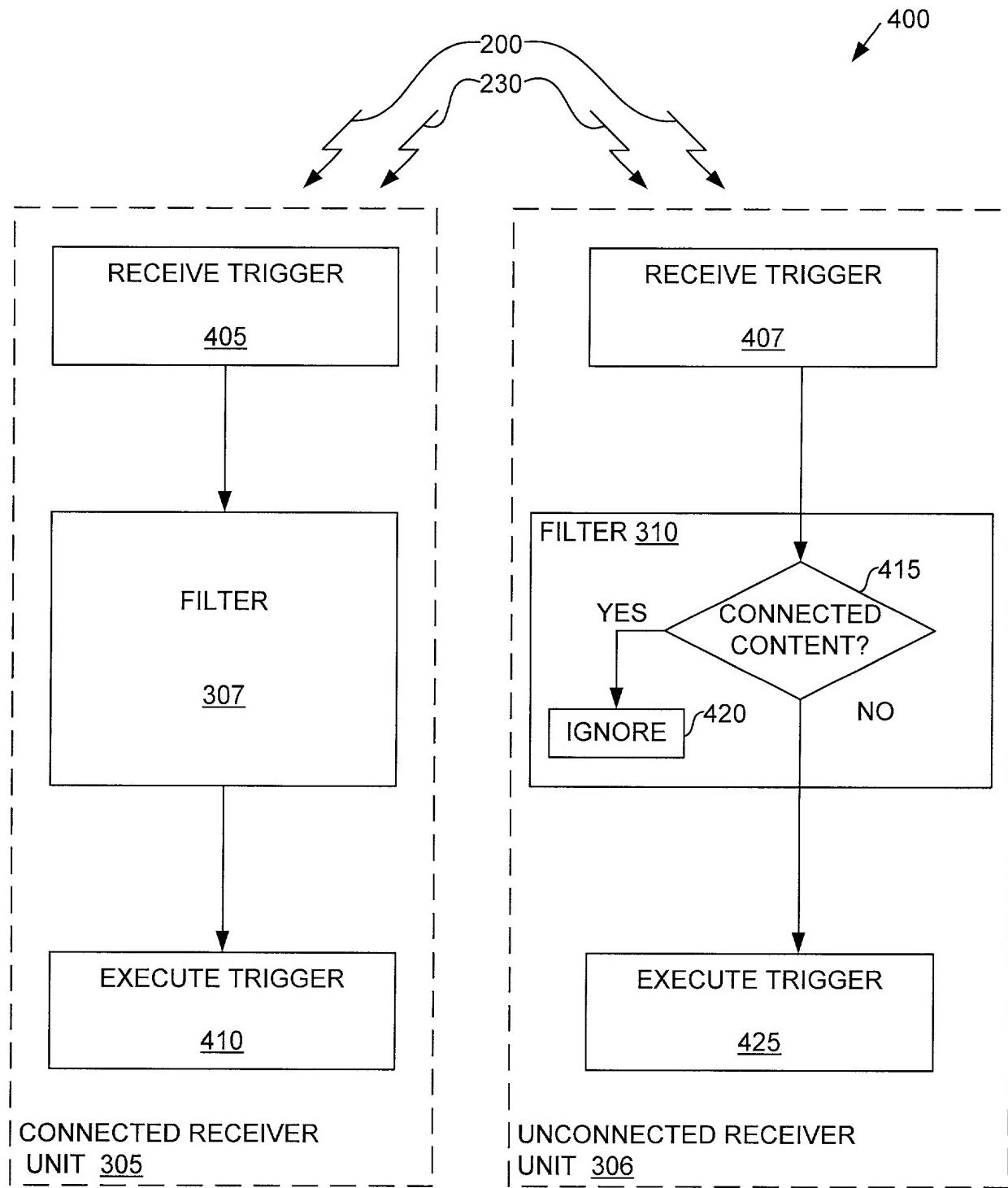


FIG. 4

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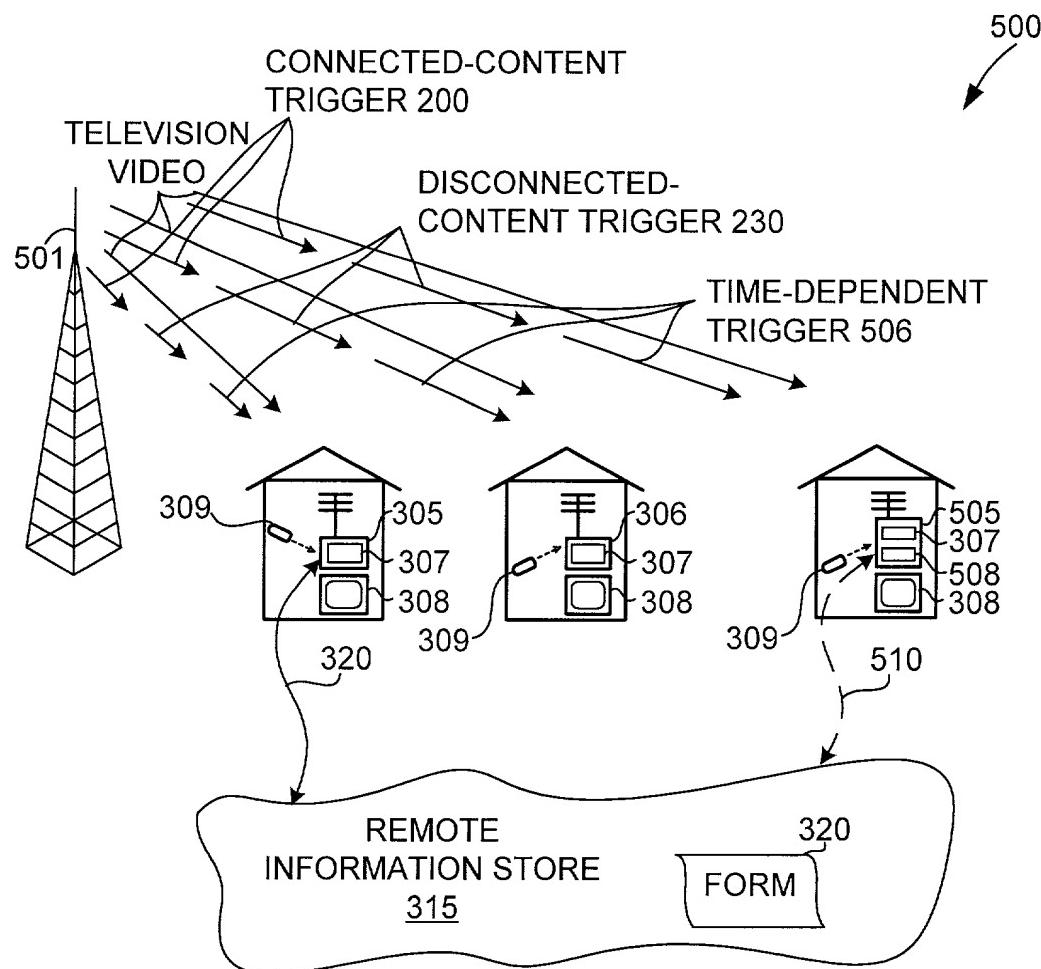


FIG. 5

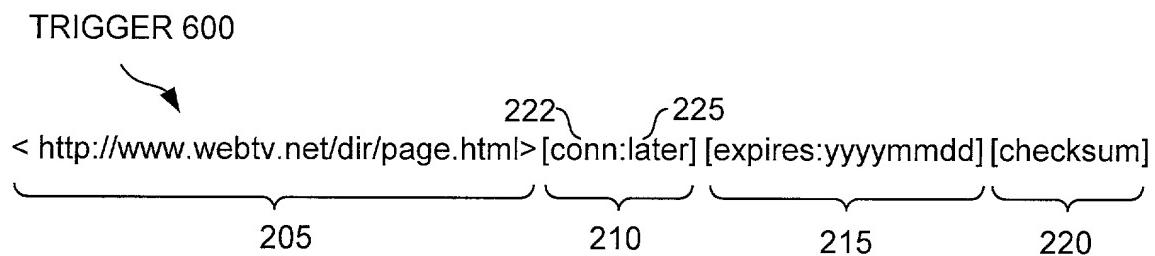


FIG. 6

## DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post-office address, and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought by way of the application entitled:

### "PROVIDING MULTIPLE LEVELS OF INTERACTIVE TELEVISION SERVICE USING TRIGGERS AND TRIGGER FILTERS"

which (check)  is attached hereto.  
 and is amended by the Preliminary Amendment attached hereto.  
 was filed on \_\_\_\_\_, as Application Serial No. \_\_\_\_\_.  
 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

#### **Foreign Application(s) and/or Claim of Foreign Priority**

I hereby claim foreign priority benefits under Title 35, United States Code Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate, or any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any foreign application(s) for patent or inventor's certificate or an PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) on which priority is claimed:

APPLICATION NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
N/A			YES _____ NO _____
			YES _____ NO _____

#### **Provisional Application**

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION SERIAL NUMBER	FILING DATE
N/A	

#### **U.S. Priority Claim**

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

APPLICATION SERIAL NUMBER	FILING DATE	STATUS (patented/pending/abandoned)
N/A		

#### **POWER OF ATTORNEY:**

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) listed below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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12-8-99

Date